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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,255	08/27/2003	Yoshihisa Suda	053466-0366	5217
22428	7590	09/30/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			FASTOVSKY, LEONID M	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/648,255

Applicant(s)

SUDA ET AL

Examiner

Leonid M. Fastovsky

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12-14 and 16-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawada et al (5,350,720).

Kawada teaches a carbon heater inherently comprising a carbon powder, inherently acting as a good conductor and comprising a boron nitride, inherently acting as a conductive-inhibiting material, the carbon heater inherently having a specific resistance in a range of 0.0003 or 0.0045 to 0.0075 ohm-cm (col. 1, lines 41-48).

As for claims 17-23, since the heater described by Kawada et al shows all the recited limitations and the instant specification does not point out any specific structure that relates to the specific resistance. It is deemed that Kawada's heater will produce those specific resistances as required in the claims since the structure is the same.

Claim 13 is a product-by-process claim, and the product itself does not depend on the process of making it. See MPEP 2113.

As for claim 16, the carbon heating element is formed by chemical vapor-phase deposition method (CVD) in the presence of methane gas which is inert gas (col. 4, lines 1-20).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15 and 24- 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada in view of Hurd (2,544,320).

Kawada discloses substantially the claimed invention, but is silent regarding a rectangular cross-section. Hurd discloses a carbon heater 15 comprising a boron film 19 and having a rectangular cross-section. It would have been obvious to one having ordinary skill in the art to modify Kawada's invention to include the carbon heater having a rectangular cross-section as taught by Hurd in order to have a shape of the heater determined by the user having a desired result in mind.

5. Claims 26 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawada in view of Kawakubo et al.

Kawada discloses substantially the claimed invention comprising the carbon heating element, comprising carbon and boron nitride and a method of making the heater by CVD process, but does not disclose a method of making the carbon heating element by firing including chloride and furan. Kawakubo discloses a method of making a carbon product by firing organic substances such as polyvinyl chloride and furan resin. It would have been obvious to one having ordinary skill in the art to modify Kawada's invention

to include the method of making the carbon product as taught by Kawakubo because they disclose all structure elements of the invention and are capable of so perform.

As for claim 27, yield of carbonization of organic substances in the method of making the carbon heater would be at least 5% since the resulting carbonization is the result of the firing process, such the result would have been an inherent result of the process done in the prior art as well.

### ***Response to Arguments***

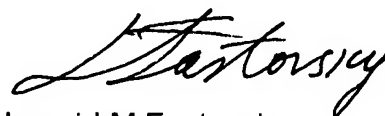
6. Applicant's arguments with respect to claims 12 - 28 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M. Fastovsky whose telephone number is 571-272-4778. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leonid M Fastovsky  
Examiner  
Art Unit 3742

Imf

9/28/05

  
**ROBIN D. EVANS**  
**PATENT EXAMINER**  
9/28/05